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A001 Free Fatty Acids Level in Cerebrospinal Fluid, Stroke Severity, and Comorbidity Indices as Independent Short-Term Prognostic Factors in Acute Ischemic Stroke in Intensive Care Unit

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Background: There are limited data about the prognostic value of free fatty acid (FFA) levels in cerebrospinal fluid (CSF) in acute ischemic stroke (AIS). The purpose of this study was to investigate the prognostic value of FFA in CSF as an independent biomarker, in addition to the comorbidity indices for assessing the functional outcome and mortality of AIS.

Materials and Methods: In a prospective cohort study from November 2016 to May 2017, we recruited 80 critically ill AIS patients, admitted to ICU. FFA levels in CSF were measured on admission. National Institutes of Health stroke scale (NIHSS), Glasgow coma scale (GCS), and modified Rankin scale (mRS) were evaluated on admission and at 30 days. Univariate and multivariate analyses were used to evaluate stroke outcome according to FFA levels in CSF.

Results: There was a positive correlation that linked the levels of FFA in CSF to the NIHSS score ≥ 16 at 30 days ($p = 0.049$) and to GCS < 7 at 30 days ($p = 0.048$). There was a significant positive correlation between levels of FFA and the infarct volume ≥ 145 mL ($p = 0.001$). Also, there was a significant linear correlation between FFA levels in CSF and functional outcome as defined by mRS score > 2 at 30 days ($p = 0.037$). Our study also showed that there was statistically significant linear correlation between FFA levels in CSF and all-cause mortality ($p = 0.007$). Based on the receiver-operating characteristic (ROC) curve, the optimal cutoff value of CSF FFA levels as a predictor for mortality in AIS was 0.27 nmol/μL, with specificity 72.2% and sensitivity 62.9%.

Conclusions: Our study revealed that FFA levels in CSF on admission were correlated with stroke severity, functional outcome, infarct volume, and mortality among AIS patients admitted to the ICU.

A002 Correlation between Analgesia Nociception Index and Surgical Plethysmographic Index in Supratentorial Tumor Surgery under General Anesthesia

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Background: Analgesia nociception index (ANI) and surgical plethysmographic index (SPI) have evolved as new surrogates to quantify pain. There are no studies that explore the association between ANI and SPI in supratentorial tumor surgeries. This study aims to assess the association or correlation between SPI and ANI at predefined time points.

Materials and Methods: After informed consent and clearance from institutional ethics committee, 55 adult patients of both sexes undergoing elective supratentorial tumor surgery under GA were included in the study. Patient demographics, duration of surgery, blood loss, visual analog score (VAS), and ANI after extubation were recorded. ANI, SPI, mean arterial pressure (MAP), and heart rate (HR) were recorded at pre and post predefined time points, i.e., induction, intubation, pin fixation, skin incision, craniotomy, dural opening, tumor resection, dural closure, skin closure, and extubation. The difference between pre- and post-time point values was calculated as (Δ) ANI, (Δ) SPI, (Δ) HR, and (Δ) MAP, respectively.

Results: The mean age, BMI, duration of surgery, and blood loss were 47.7 ± 12.6 years, 22.8 ± 4.3, 210 ± 55 minutes, and 471 ± 125 mL, respectively. This study population had 23 female and 32 male patients. ANI and SPI showed a good negative correlation. Mixed effect modeling showed estimates of −0.44, −0.78, and −0.357 for pre-time point, post-time point, and delta (Δ) values, respectively. ANI showed a weaker negative correlation with HR and MAP, with estimates of −0.14, −1.35, −0.84, and 0.54–1.27, −0.60, respectively. ANI at extubation and VAS showed a negative correlation (rho = 0.76).

Conclusions: Both ANI and SPI reflect the balance of analgesia in supratentorial tumor surgery with a good negative correlation.

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